

mint was always so busy as to issue rupees monthly for a series of years. Many mints of Akbar's are as yet unrepresented in my cabinet. My means are small: my opportunities few. I cannot afford to purchase all I see. Those I have given will, however, convince my co-workers in numismatics that the coinage of Akbar offers a field worthy of being searched in. The results give us variety in inscriptions, in mints and in execution.

The weights are given to each rupee, the figures underneath the bar indicating the No. of grains in each case.

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*Notes on the remains of portions of Old Fort William discovered during the erection of the East Indian Railway Company's Offices.—By R. ROSKELL BAYNE.*

I presume that I may take it for granted that most of my readers know from "Orme's History of the Military Transactions of the British Nation in Indostan" published in 1778, something of the locality and the form of the first Fort William. To those who do not, Vol. II, Book VI, headed "the war in Bengal", of the above work will give a very good general idea of it, and the Map of "Calcutta in 1756" contains much interesting information that has been of considerable use and guidance to me. In p. 62, from Orme's account of Old Fort William we read as follows:

"The fort of Calcutta, called Fort William, was situated near the river, and nearly half way between the northern and southern extremities of the Company's territory. Its sides to the east and west extended 210 yards; the southern side 130, and the northern 100: it had four bastions, mounting each 10 guns: the curtains were only four feet thick, and, like the factory of Cossimbazar, terraces, which were the roofs of chambers, formed the top of the ramparts; and windows belonging to these chambers were in several places opened in the curtains: the gateway on the eastern side projected, and mounted five guns, three in front, and one on each flank towards the bastions: under the western face and on the brink of the river, was a line of heavy cannon, mounted in embrasures of solid masonry; and this work was joined to the two western bastions by two slender walls, in each of which was a gate of palisadoes. In the year 1747 warehouses had been built contiguous to the southern curtain, and projecting on the outside, between the two bastions, rendered them useless to one another; however, the terraces of these warehouses were strong enough to bear the firing of three-pounders which were mounted in barbette over a slight parapet."

Fort William was not the first Fort built by the English Traders in Bengal; that at Hugli had been erected either at the first voyage to Bengal or soon after, about 1640; it was called a Factory, and the Mogul Empire jealously prevented anything like a bastion being erected about it.

In 1696 on the outbreak of a war between the Rajas on the western side of the river Hugli and the Mogul Empire, the three European settlements were allowed to enclose their factories for the protection of their goods, and says Orme, "they, taking for granted what was not positively forbidden, with great diligence raised walls with bastions round their factories." Such was the origin of Hugli, Chandernagore and Calcutta Forts. Calcutta is then described as a small town contiguous to Sootanuddy: we may ascribe the date of 1696 to the first Fort William as an enclosed fort.

In 1753, the Mahratta ditch was dug, originally intended to be seven miles long, only three were completed, this was a work carried out at the request and "at the cost," so says Orme (p. 45), "of the Indian inhabitants of the colony." He remarks, "Allaverdy made no objection to this work, and moreover permitted the English the same year to raise a rampart with bastions of brickwork round their factory at Cossimbazar." This, I am inclined to think, must have been the date of the addition of the outer bastions of Fort William; which, as I shall be able to shew, are additions. I, however, cannot find any direct allusion to their being built.

In 1756, repairs to the fort were begun in compliance with orders from the Court of Directors. Holwell writing in a letter, dated November 30th, 1756, says—"On the receipt of your letter by the Delawar in April we began to put the settlement into as good a posture of defence as we could, and as the parapet and embrazures as well as the gun carriages to the westward of the fort were much out of repair, they became the first object of our attention; a number of workmen were employed, and I believe the parapet and embrazures, the greater part of which we were obliged to pull down, were more than half run up—when they were stopped by a Purwannah from the Suba."

That these repairs had been going on for some time past, and that they were extensive, is evident from the fact that considerable diligence had been employed in excluding spies from the city who had reported that the place was being fortified.

The excuse sent was to the effect that war had broken out between England and France, and in order to prevent their factory from being taken by the French, they state, "we were only repairing our line of guns to the water side," which Orme states "extended on the brink of the river in front of the western side of the fort."

I have prepared a plan, Plate X, from a portion of Simm's Map, which

is a particularly accurate survey shewing the buildings as they stood in 1847, and over it I have shewn the fort in a thick outline, following Orme's measurements for the south curtain and the length of the east and west sides. The measurements taken by me comprised the whole of the north east bastion, a portion of the north west sufficient to determine its junction with the curtains, all the north curtain with about 150 feet of each of the east and west curtains. All these dimensions I have accurately taken, and with them and Orme's figures, I have laid out the east the west and also the south sides.

Measurements made on this Map near the north west bastion at its junction with the curtain wall to the river are as follows: water line in 1756 about 70 feet, in 1847-49, 425 feet, to Jetty edge of to-day, 1882, very nearly 800 feet. They serve to shew how the river bank has been pushed west.

The second or larger scale Plan, Plate XI, that I have prepared, shews the outline of the buildings newly erected. The walls which are tinted black are the walls and bastions of the first erected fort; whether the small inner square of the north west corner should be shewn as belonging to the old Fort, I cannot now say as I failed to note if the work butted or bonded into the curtains. The lighter tint shews the bastions erected *after* the square towers, with faces, flanks and salient. The next lighter tint shews some inner walls, always in brickwork in mud, and running parallel to the curtains, and about 13 to 14 feet within them. Occasionally I find a cross wall, but I have failed to note them all, or I have missed them.

I have also shewn on this plan such drains as I found. The regularly formed building in the centre, it will be seen, I have called the Carpenter's shop. The small diagrams to a larger scale are the sections of walls, Plates XII and XIII, drains etc.

The whole of the dimensions recorded were made by myself in order to ensure a faithful record of what I found.

The small perspective sketch, Plate XIV, has been made from the measured plan and filled in from a little pencil sketch made in my note book at the time; at no period of the excavation was it laid as completely bare as is here shewn, I was hurrying on with the work of building the Company's offices and had no time to stop to expose the whole at a time.

I will now proceed to recount to you what I found, as nearly as I can, in the order in which I found the works shewn on my plans.

On January 2nd, 1880, I opened the ground on which the East India Railway Company's offices are built. It had just been cleared to floor level of some Custom House sheds built at various periods, some I believe as recently as 1866. I took the curb level at the junction of Clive Street and Fairlie Place as my datum for levels, calling it 101.5. The general

level of the floors of the godowns was about 1·0" above this. The floor of the new building, to which I shall have to refer in a comparison of levels, is 1·5 feet above my datum or 103·00.

In starting the setting out of my foundations I selected as a commencement the longest straight wall; it is a wall 220 feet long. Before we had been at work excavating a day, I might almost say a few hours, we found we were on an old wall, the full length of our proposed wall, and almost in exact alignment with it and 4 feet thick.

Knowing as I did that I was in the locality of old Fort William, I inferred that I was on the wall or one of the walls of the Fort, and I proceeded at once to dig down at its side in three or four places in order to see how far it went down and what it was like. I found it went down nearly two feet below the level at which it had been decided our walls and concrete were to go, and as it was a good straight solid wall with a fair base, it was decided to build on it in place of pulling it up. Its base being smaller than our calculated areas and pressures, it has a greater load than the one ton to the foot of the other walls; its load is  $1\frac{1}{4}$  tons, but its solidity has warranted the use made of it, and it saved some two or three thousand Rupees. In addition the wall, buried though it be, we know it to be there, it has not been annihilated.

In setting out this 220 feet wall of the new building, I had been guided by the curb stone of the footpath of Fairlie Place, and had laid out my wall parallel to it. I now found, (after it had been settled to make use of the wall), that it was 9 in. in its length out of parallel with the curb, so in order to utilize the wall, I had to throw my centre line longitudinally westward to the north and eastward to the south on a centre point 9 in. each way, and my new wall then lay exactly over the centre of the wall that proved to be the north curtain of old Fort William. I mention this in detail, as I wish to call attention to the very close alignment of streets of to-day with those shewn on the small Map that accompanies Orme's Vol. II, already referred to. The plan is headed—"Plan for the intelligence of the Military Operations in Calcutta when attacked and taken by Seeraj-ul Dowleh, 1756"—I shall have occasion later on to call attention to this close adherence to old lines of streets, this case I think a very remarkable one.

So soon as I had satisfied myself that this wall was a part of the old Fort, I narrowly watched the excavations following it and began to keep a careful record of the walls as they were exposed. Immediately following this discovery of the north curtain wall, I found we were on some very heavy and closely built walls that soon proclaimed themselves in their raking lines as the flanks and faces of a bastion. As far as I possibly could, without delaying my work, I had the earth from between the walls

excavated before the demolition of the walls themselves was begun, as it may be imagined there was very little of the old walls left, for the corners of the new building, made up as they are of a main staircase, bathrooms and urinals, implies a network of cross walls in the new work. In every case the old walls go down some two feet below the new walls, and in some cases (the north face wall for example) have a slice cut off their inner face from nil at one end to one or two feet at the other, and so we cut and sliced them to make way for our foundations. About this time we found the walls of a staircase or ramp in the junction of the north curtain wall and the old square bastion of the earlier construction. There was another, a stair, at the corresponding corner at the south-east bastion; for Holwell tells us at the time the prisoners were in the verandah near the Governor's House: "Besides the guard over us, another was placed at the foot of the stairs at the south end of this verandah leading up to the south-east bastion to prevent any of us escaping that way."

As I have already said, the fort walls were founded at a lower level than the walls of the new building by 2 feet, so that below our foundations, would still be found a map as it were of the old Fort.

I now found that the outer bastion with its flanking faces and salient was a later work, as the junctions of the flank walls with the older curtains butted and did not bond, in addition the old plaster surface had not been taken off but the new work was built against it. I afterwards found this to be the case with the north-west bastion, which, as will be seen, had not a square bastion similar to the north-east corner.

The walls were battered with a fall in of about one in ten, and the outer faces were finished with a thin coat of lime plaster of a rich crimson tint, and reticulated in imitation of stone work, the stones being about 1'6 long by about 9 to 10 in. deep. This was the case with both the bastions.

It struck me, as I exposed this deep red plaster, that probably this factory bastion would be called the Lall Killa (Red Fort), and it suggested itself to me that the Lall Diggee (Red Tank) may have taken its name from the Red Fort.

All this work of the bastions, more particularly the later portion, was of very good material and excessively hard to break into. The bricks of all their old works were  $7\frac{1}{2} \times 4 \times 1\frac{1}{2}$ . The lime used here was shell lime. We often found large oyster shells, of a size that would weigh a seer to a seer and a half, embedded in the wall, and by the hundreds strewn about and buried in the fillings.

The spaces between the older walls of the bastion were loose earth filling and no floor, the spaces behind the new bastion faces and flanks were paved brick on edge. The level of this paving and the bottom edge of the external plaster was 98'00, or 3'6 below my datum line, 5'0 below

the floor level of the new building. On a corner of the plaster in the passage way behind the bastion north face was a bench mark, consisting of an inverted arrow-head, in black on the white plaster.

Of the east curtain wall we saw but little, only where we cut through it with our cross walls, and it began to be a matter of regret whenever we had to cut through it, it was such a labour and toil and caused such delay.

The soil to the north curtain wall appeared to have been but little disturbed, and so far as I noted. to keep about the level of the plaster noted in the north-east bastion. Unfortunately a little north of this wall there had been a wall of the Custom House sheds that had disturbed the soil, but as a rule the level seemed, as far as my observation went pretty regular. On the east curtain wall there had been little or no disturbance, the soil was often quite undisturbed, and only here and there were potsherds in it.

I could not make much of the north-west bastion; it was nothing like so regularly built, and had not the older inner square tower (unless the two square walls shewn on my plan belonged to it), there was no ramp or stair to the roof that I noted, and altogether it was very confused, and we were pushing on with concrete and walls, that there was no time to wait until disjointed fragments could be read and understood. Here I find at least that the old walls of the north and west curtains met with a small rounded corner, as the older plaster was still on the walls where the newer work butted it. This bastion appears to me to have been of very much smaller size. Added to all this I had not the opportunity of exposing the salient, as I had done in the north-east one.

As already stated the east and west curtain walls I have traced for 140 feet south.

In one place in the east wall I found, what appeared to me to be a sill of a door and a plastered jamb, but a Custom House wall had gone through the old wall about here, and so obliterated it that I could not make certain of it. On the north curtain wall there was neither break nor opening.

My next discovery of interest was a shed that had evidently been built an open one, and afterwards enclosed. It was 90 feet long by 40 feet wide, built parallel to the north curtain wall with a row of 8 piers down the centre, just such a flat-roofed godown on brick piers as is to be found all over Calcutta to-day. Down the centre face of each pier had been a sunk water channel, all were visible at floor line and the shallow drain on the north side into which they ran was perfect. The spaces between the columns on the faces had been filled in, thus turning an open into a closed shed.

The floor of this shed was brick on edge, and all over the floor in some places  $1\frac{1}{2}$ , in others up to 8 or 9 inches in thickness was burnt wood ash, the floor of the godown in places where I had to cut through it bearing

traces of severe fire. This place I identify as the Carpenters' shop, and to which I will draw attention later on. The floor of this godown was 98·28 which makes it very nearly 4·9" below our present ground floor level. The wall plaster was uninjured, but we know that lime plaster will bear without injury a severe fire. The wood ash I take to be the debris at the time of the burning of the fort; above it, as will be seen from my section, is the khoa debris from a roof fallen by fire or demolition. It evidently was never cleared out after the fire, but had become a heap of rubbish, and so built over by the succeeding floor, shewn at the next higher level. Along the north wall of this shed I found large heaps of cinder with pieces vitrified as if from a forge. The earth to the north was about 1·9' below the floor level of the shed.

I now come to the lightly tinted walls behind and parallel to the curtain walls. They vary in width, as will be seen from the plan, in no case 18 feet, the dimension given by Holwell of the "Black Hole". In one place only did I find any outer verandah, namely, on the west wall.

In every case these walls were of brickwork in mud, at least that portion that I found below the ground. They were very deep, almost as deep as the curtain walls, and very thick, all of them made of very thin  $1\frac{1}{2}$  brick. In a few places I found cross walls, and I find in my note book a note to the following effect: "behind the 3'·0" mud walls, the space seems to be divided into cells." I do not, however, find actual record of more than a few of these cross walls. I would very probably miss them, as, if there were but few, it would be quite a chance my coming on to them, and unless my walls or column foundations coincided with them, I should of course miss them, and I had no time to spend over searching for them. I could do little more than note and record what I came across.

I have a particular object in specially drawing attention to these inner walls and chambers which, as will be anticipated, points to the locality, size and character of the Black Hole, but this I will postpone until I have described the walls etc., found, only repeating that my explanation of not always finding the cross walls of the chambers equally applies to my not finding the outer verandahs corresponding to those of the Black Hole: I simply did not hit on them in the foundations of my walls, or it may be that the "court of guard" rooms *only* had a verandah. Along that portion of the west wall, also alongside an entrance door to be alluded to presently, and where most probably a guard would be stationed and would require a verandah, did I find verandah foundations.

I will return to the western wall, but before describing it, I must remark that as the walls of the new building running north and south approached the west, I found the natural ground sloped west, and that the drain followed a depression, which by the time it reached the west curtain wall had grown

almost into a creek, compelling me to put in the foundations of the last two walls 3, 4 and 5 feet below the other walls, and the soil there was black, stinking river mud full of pot-sherds, and here we found a great many boars tusks of a small size.

Following the west curtain wall from the north west bastion, and about 45 feet from it, we found a Sumph into which the drains all emptied, or over which as we found them they all ended. We came on to this Sumph from behind, and before we actually found out what it was, we had destroyed its east face, and the loose filling caved in from the top as we cleared it out at the bottom, thus proclaiming its nature.

The main drain, that running from beyond the Carpenters' shop, I had traced right up to the west curtain wall. I have shewn it in section in fig. 3, Plate XII, it was a parallel-sided drain, at the upper end not more than 6 in. wide, widening to 13 in. at the lower end, and everywhere filled up with black mould. Over it and burying it was a later drain, a broad saucer drain, that in its turn had become filled in and buried. The two drains kept the same course; it was only the last 75 or 80 feet that the second drain was found. The Sumph into which these drains emptied was about 3'6" square, and as I have said, coming on as we did from the side of an opened trench, we had destroyed it in part before we knew what it was, so that we did not see the entry of the two drains into it. The parallel-sided and lower drain fell fast toward the Sumph nearly 2 feet in 10; where we had cut across it, we found it full of pot-sherds, a coarse glazed blue and white ware, not a scrap of old willow pattern, square ended broken glass bottles, a black loamy earth, and a few very coarse thick pipe stems and bowls. We cleared out about 4 feet of this drain, tunnelling as it were into it and then ceased.

The Sumph had been filled in with brick rubbish very loosely, so that the filling was full of cavities into which water had filtered, leaving on all the bricks a thin deposit of clay. This Sumph was nearly perfect up to about the second level of floors and material, above the rest the road ran. On emptying this Sumph we found on its western face a low arch with a versed sine of about 6 in. and above the floor of the Sumph. Into this opening we thrust a rod and found it 3 feet deep with water; probing 3 feet deep, we could feel a bottom of brickwork; we then tried it horizontally, and thrust our rod into vacuity; we tried a second and a third time and at last, finding that 20 feet found no end, we concluded it to be a drain.

As we had found water of which we were in want for our building operations, we decided to make use of it, and sank out to the bottom of the culvert which we then found to be a parallel-sided drain 2'6" wide and 3 feet 6 high with an arched bottom and top; on a man trying to go into the drain we found it silted up about 2 feet deep. We put up a one H. P. Ryder Engine, and for 12 months drew water from this source. The water was perfectly clear and limpid. The workmen all drank of it.



Since the completion of the building a man hole has been sunk over this culvert, 45 feet to the west of the curtain, and a Tangye Engine has now drawn for 21 months about 10,000 gallons of water a day from it. At a point, 30 feet beyond this well and to the west, is an iron grating, so I have been told by the coolies who have been into the drain to clean it out. The culvert falls about 15 inches in 30 feet from the well to the grating. The old Sump was filled in on the completion of the work and not destroyed.

The water is clearly river water as a green vegetation grows over it in the hot weather, precisely similar to a vegetation growing over the Chand Pál water in an adjoining tank pumped direct from the River, so that there is still existing some communication or filtration.

To continue my account of the west wall, at 55 feet from the flank wall of the bastion I found one jamb of a doorway in a wall 6 feet thick. This extra thickness of wall I could not understand at first, but on consideration I could see that the wall had been thickened on account of the door opening, and on looking for the other jamb I found a Custom House wall had passed through and destroyed it. I then looked for and found the extent of the thickened wall, which I found to be 16 feet wide, leaving an opening of 8'4". There is a change of level in the pavement, inside and out, in this door opening; they both have been additions on the date of the wall as the plaster jambs go below both floors. On finding this door in the curtain wall I dug west, following the pavement and looking for the rampart wall which I found at 25 feet distance. I looked for this, guided by the Panorama of Calcutta in Orme's Vol. II. Again referring to his plan, I could see that I was not at the limit of the ground west of the curtain, so I continued my searching west, until at 45 feet from the curtain wall I found a second wall 2'6" thick and parallel with the first and second walls; this I take to be the River or Quay wall. The doorway of the rampart wall measures 7'1" wide, it has a stone sill in the opening, and here again the paving has been added since the door was originally built, as the plaster jambs and step go behind and below the pavement. These doors are the River side entrances alluded to by Holwell in his letter of November 30th, 1756 in which he states that "The Suba from his litter returned my salaam," this was on his resigning his sword "and moved round to the northward and entered the fort by the small western gate." These two outer walls I have found again further south. The entire space, so far as I have found it between the curtain wall and the next wall west, is paved with a brick on edge, a good large 10 inch brick well burnt, laid in sand or soorkey on a brick flat which is laid on 2 or 3 inches of burnt wood ash, the whole forming a good level well laid floor. In places at a lower level of 4½ I find this floor again inside the curtain wall. I found it

the whole length of the north curtain, between it and the mud and brick wall. I do not know if on the west side it only occurs in the gateway or if it continues north and south, I do not recollect it to the north towards the Sump, but I found it further south in some gun platforms I have yet to describe. These details I have just described I found since the completion of the building, and on searching for some information as to a wall on which I found myself in doubt when preparing the diagrams for this paper.

In putting in the drain pipe from our latrines I cut through what appears to me to have been a sunken gun platform and the commencement of a second to the south. There were three steps down into it, plastered with splayed edges almost as if new, so perfect was the plaster and the edges. The three steps were respectively 6", 8" and 4 inches in one place, the 8" and the 4" uniting into one of 12"; the change had been broken away before I saw it. The curtain wall had a sunken face in it, thus thinning it to about 3 feet. This work was all addition as there were plaster faces behind the platform work. The outer face of this curtain was in some cases plastered, in some only whitewashed.

I imagine these to be some of the hurried works taken in hand, as alluded to by Orme, at the time the fort was assailed.

I would point out here (shewn on the Plan, Pl. X, O and Pl. XI) the verandah foundations opposite this western gate the only place in which I have found signs of verandahs. I do not now understand the cross wall shewn in my plan opposite the entrance gate. On the east face of this verandah wall was a very perfect surface drain, with a second one coming into it. I have no record of cutting through this verandah wall when putting in the drain already alluded to, so that I presume it stops short of the gun platform. This completes my notes of this wall.

I particularly drew attention to the inner parallel walls behind all the curtains, north, east and west, referring to Orme's description of the fort telling us of these inner walls. I have drawn to a small scale, Fig. 5 Plate XIII, the south-east bastion, reproducing the north-east bastion with its stairs to the terrace. My authority for shewing these stairs at this bastion I have already cited from Orme.

From the small map in Orme's Vol. II, of Calcutta, I make the centre gateway to be about 180 feet from the south-east bastion. I have shewn in my conjectural plan this central portion as having 94 feet clear width inside and 100 feet outside. I scale this projecting portion as 10 feet, and Orme tells us it had one gun on each flank, for which I have allowed a projection of about 12 feet, whether more or less, does not affect what I want to draw attention to. On the right, so called by Holwell, that is the south, I have put the room of the guard allowing a small verandah on the north, of 10 feet

in width ; the room itself I have shewn 20 feet. The barracks behind it I shew as 40 feet. I next shew a chamber 17 feet wide ; this, as will be seen, brings us up to the face of the square bastion, the first built portion of the Fort. So that we have only to shorten by one foot the barracks, or the room of the guard, or the space inside the gate, to make up this dimension to 18 feet. In any case here undoubtedly was the Military Prison, the Black Hole, so called by soldiers themselves, not so called, as many suppose, because of the events that occurred here.

I have drawn your attention to a shed which I have called the Carpenters' shop. I will now quote a few lines from Holwell's account of the closing events of the 20th June.

“As soon as it was dark, we were all, without distinction directed by the guard over us, to collect ourselves into one body, and sit down quietly under the arched verandah or piazza to the west of the Black Hole prison, and the barracks to the left of the court of guard ; and just over against the windows of the Governor's easterly apartments. Besides the guard over us, another was placed at the foot of the stairs at the south end of this verandah, leading up to the south-east bastion, to prevent any of us escaping that way. On the parade (where you will remember the two twenty-four pounders stood) were also drawn up about four or five hundred gun-men with lighted matches.

“At this time the factory was in flames to the right and left of us ; to the right the Armory and Laboratory ; to the left the Carpenters' yard : though at this time we imagined it was the Cotta-warehouses.\* Various were our conjectures on this appearance ; the fire advanced with rapidity on both sides ; and it was the prevailing opinion, that they intended suffocating us between the two fires : and this notion was confirmed by the appearance, about half an hour past seven, of some officers and people with lighted torches in their hands, who went into all the apartments under the easterly curtain to the right of us ; to which we apprehended they were setting fire, to expedite their scheme of burning us. On this we presently came to a resolution, of rushing on the guard, seizing their scymitars and attacking the troops upon the parade, rather than be thus tamely roasted to death. But to be satisfied of their intentions, I advanced, at the request of Messrs. Baillie, Jenks and Revely, to see if they were really setting fire to the apartments, and found the contrary ; for in fact, as it appeared afterwards, they were only searching for a place to confine us in : the last they examined being the barracks of the court of guard behind us.

“They ordered us all to rise and go into the barracks to the left of the court of guard. The barracks, you may remember, have a large

\* The Company's cloth warehouses.

wooden platform for the soldiers to sleep on, and are open to the west by arches and a small parapet-wall, corresponding to the arches of the verandah without. In we went most readily, and were pleasing ourselves with the prospect of passing a comfortable night on the platform, little dreaming of the infernal apartments in reserve for us. For we were no sooner all within the barracks, than the guard advanced to the inner arches and parapet-wall; and, with their muskets presented, ordered us to go into the room at the furthest end of the barracks, commonly called the Black Hole prison; whilst others from the court of guard, with clubs and drawn scimitars, pressed upon those of us next to them.

“Figure to yourself, my friend, if possible, the situation of a hundred and forty-six wretches, exhausted by continual fatigue and action, thus crammed together in a cube of about eighteen feet, in a close sultry night, in Bengal, shut up to the eastward and southward (the only quarters from whence air could reach us) by dead walls, and by a wall and door to the north, open only to the westward by two windows, strongly barred with iron, from which we could receive scarce any the least circulation of fresh air.”

I do not think there is any room to doubt now the *exact* locality of the Black Hole.

In the plan attached I think it is on the spot marked N (on Plate X) and if my scaling from Orme's Map is correct, and if his 210 yards given as the length of the east face is correct, the foundations of the building still remain, and their exact locality could with very little trouble or expense be found, because, as I have stated, these verandah walls go down very deep, deeper than the Custom House shed walls, and would consequently be, as I found those to the north, undisturbed. The salient and the faces of this bastion there is no doubt have been destroyed by the Post Office buildings, but the inner corner of the older square bastion appears to me to have fallen beyond the Post Office building, if, as I have said, Orme's figures are correct; and as I have shown they are *exact* on the north face.

I would now draw attention to the south-west corner. It will be seen that a considerable portion of this lies beyond the old Military Accounts Office. If the building is condemned as one to come down, I do hope attention will be called to obtaining a faithful record of all to be found here, and I am persuaded that all the bastion foundations will be found below those of the house as intact as I found those of the north-east bastion.

An expenditure of 150 Rupees judiciously applied would enable us to determine a good deal more of the fort walls without disturbing any building or breaking up any floors.

To return again to the levels of the old fort, I would draw attention

to the floor and differences of level. The Carpenters' shop, for instance, with its floor of brick on edge over 3 in. of fine concrete laid on 3 in. of brick rubbish; going upwards above this floor, wood ash, and the debris from the destroyed roof, then a tile floor on concrete 1'5" above the first floor, then again over that 1"6" of rubbish, and then a metaled road, that in this place ran between two Custom House sheds; then, if I had made my section through one of the sheds, its floor of brick on edge over brick flat, and now again the floors of the new buildings, of stone pavement on 6 in. of concrete or 8 in. of concrete with Portland cement finishing. These two last are four feet nine inches above that of the Carpenters' shed of 1756. Thus there are four floors in succession, first that of 1756, then the tile floor, age doubtful, then one of 1866, and now the new one of 1883.

I have incidentally referred to the streets shewn on Orme's map, comparing them with those of to-day. In the extract from Simm's Map, on which I have shewn by a thick dotted line the water edge as shewn on Orme's map, a ghaut will be noticed that does not quite fit in with the end of Khoyla Ghaut Street. This non-fit is due I fancy to an error in Orme's map increased by my plotting from a map without a scale. I have, however, adhered closely to what I have measured or scaled, and have not cooked my dimensions in order to make them fit in. The angle of the street is exactly as at the present time.

The wide opening in Clive Street opposite the Bonded Ware Houses, and the little bend west at the head of Clive Ghaut Street are as exact as this small scale could shew them. Church Lane is another accurately fitting bit, and so in fact are numerous others.

Judging from the Map already referred to, "the Park," now Dalhousie Square or Lall Diggee, appears to me to have extended itself north a little, and the road on the north of it to have been correspondingly narrowed.

I have shewn on the Plan (Plate X) the place which I conjecture to be the un-finished Ravelin, into the ditch of which Holwell says "the dead bodies were next morning thrown."

At the time the drainage pipe was put down in Fairlie Place, Mr. Bradford Leslie, then Engineer to the Municipality, noted that they had to cut through a pucca ghaut exactly opposite the lane leading up to No. 2 Fairlie Place. It agrees exactly with the ghaut shewn on Orme's map, and also on the perspective sketch from the river side. This is a valuable piece of confirmatory evidence of the correctness of this plan and the old line of river bank at that date.

Nothing of interest was found in the excavations save a chain shot or two, some 30 or 40 cannon ball of varying sizes, and of malleable iron, some almost bullets in size; these were mostly found at the west end of the Carpenters' shop and outside it. The breach end of an old 10 pounder

gun, and the top end and ring of an old anchor stock was all that was turned up.

In conclusion, I would here note a record I have made of the building, and of the extreme point of the north-east bastion (the salient as it is termed).

Whilst rounding off the corner of our boundary wall so as to ease the foot traffic passing it, I have secured the little bit of triangular land belonging to the building by paving it, and on this paving I have had cut, in the northern line of the bastion face and on the eastern edge, a line parallel to the eastern face but two feet removed within it, as the actual line lies below the foot path and off the East Indian Railway land.

I would have liked to have placed a small tablet here to record one fixed point of the old fort, but as I was spending money belonging to the Government of Bengal, I could not do it. The stone to carry a tablet is inserted, ready if at any time the money to pay for the tablet is forthcoming. My idea was a brass plate with an engraving on it of the outline of the fort and a short legend of explanation.

I would solicit permission to make a few excavations here and there in the Custom House compound. Digging a few holes does not cost very much, and with the north portion of the fort and lines to start with, the exact spots could be indicated without much guess work or hunting for them.

I think an excavation (I don't ask for it) at a place measured from the point of the central or east gate drawn east, and about 100 feet east of the east curtain would find the burial place of the victims of the night of June 20th, 1756.

I do not know if any records were kept of what was found during the building of the Post Office north-east corner, I fear none. It was stated that when the Port Commissioners offices were built, some of the foundations then uncovered were those of the fort. A glance at Simms Map, now that we have the north curtain fixed, will shew that this cannot have been the case, as this site in 1756 lay in the river or at least beyond the river wall of the fort, and in the mud banks.

In the excavation for the buildings now going on in Koyla Ghaut Street, the river wall shewn in Orme's map should have been found just about here, but as I have found this river wall to be only a small wall, 2'6" thick, it would probably escape detection amongst such a maze of walls, and of so many ages. I was repeatedly over these excavations to see if anything of interest was to be found.

One wall I found, a battering wall 2'10" thick, 2'3" at an upper point, but it was too far inland to be the river wall. The character of the work, however, was the same as that found in the inner walls of the Fort, partly

bricks in mortar, partly in mud ; on the outer face the earth sloped Riverwards as if tipped in from the wall ; it had behind it a sort of floor roughly laid, small khoa over a large quantity of oyster shells and brick rubbish.

*Essays on Bihári Declension and Conjugation.*—By G. A.  
GRIERSON, B. C. S.

A. INTRODUCTORY.

The dialects of the Bihári\* language present many interesting facts to the student of philology. Hitherto only two of these dialects have been thoroughly investigated, and each of these in one special form. Dr Hoernle's Grammar treats of the Bhojpúri dialect as spoken near Banáras, where it is by no means free from the influence of its neighbour the Baiswári, and the present author's Maithilí grammar treats mainly of the standard dialect of the centre of Mithilá. The Mágadhí dialect has not been treated of in any form, but it will be found a most useful object of study, as showing the stepping-stone between the somewhat archaic forms contained in standard Maithilí, and the more phonetically attrited forms which we find in Bhojpúri. The last language, extending to nearly the centre of Hindústán, and spoken by a warlike energetic race may be considered as the most phonetically advanced of the three Bihári dialects. Its people have no literature to which their speech can be referred, and with the energy peculiar to their race they have disembarrassed themselves to a large extent of the somewhat cumbrous grammatical forms of their ancestors, and have succeeded in wearing down periphrases and compounds into new words bearing no outward sign of their origin. The inhabitants of Mithilá, on the contrary, intensely conservative from beyond historic times,† and possessing a literature dating from the fourteenth century, have changed their language but little during all this period. As Maithilí was born at the time when the Gaudian languages first emerged from the Prákrít, so it has remained to the present day, and the herd-boy, as he tends his buffaloes in 1882, speaks the same language as that in which the old master-singer Vidyápati sang of the loves of Rádhá and Kṛishṇa to king Siv Singh five centuries ago. It is to Maithilí therefore that we must look for the earliest forms of Bihári declension, and if we do we shall rarely be disap-

\* This is the name which I have adopted here and elsewhere for the "Eastern Hindí language" treated of by Dr. Hoernle in his Gaudian Grammar.

† At the marriage of Sítá, which took place at Janakapura in Mithilá, Rám is said, in Maithil tradition, to have cursed the haughty Maithil Bráhmans, who refused to hold any account of the foreign prince from Audh. The curse runs,

गृहे शूरा, रणे भीता, परस्परविरोधिनः ।  
कुलाभिमानिनो यूयं मिथिलायां भविष्यथ ॥